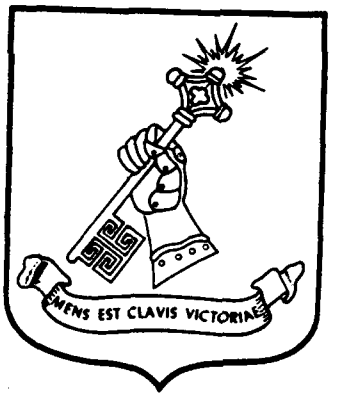
Back Azimuth Check:
A Look At Mongol Operational Warfare

A Monograph
by

Major Glenn H. Takemoto
Quartermaster



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ABSTRACT

Back Azimuth Check: A Look at Mongol Operational Warfare by MAJ Glenn H. Takemoto, USA, 60 pages.

The Army is in the midst of formalizing its operating concept for the land component of AirLand Operations (ALO). This concept stresses the avoidance of attritional, mass on mass, linear warfare. ALO seeks quick and decisive victory with minimal losses through strategy, preparation, setting conditions for success, decisive operations, and force reconstitution. This evolutionary concept requires changes in doctrine, training, organization, materiel, and leader development (DTOML). A model provides a useful aid in guiding these required changes. This monograph seeks to find such a model by looking to the past.

The monograph follows General MacArthur's methodology of seeking insight to the future by looking to the past. It begins with an examination of the charted path to the future, i.e., the AirLand Operations concept and the requirements it places on the Army. Then it reviews two major Mongol campaigns, one in the Middle East and the other in eastern and central Europe, to provide a historical basis for understanding and visualizing Mongol operational warfare. Next is an examination of the Mongol's DTOML to provide insight into how they gained the qualitative advantage that contributed to their success at the operational level of war. The monograph concludes with a discussion of the derived implications.

The principle implication derived is that Mongol operational warfare may provide a useful model for the ALO concept. The operational warfare of the Mongols appears to be the antecedent of ALO. The Mongols, over 750 years ago, mastered the capabilities required by the ALO concept. As the Army develops the DTOML for ALO, the Mongols provide a useful model to facilitate this undertaking. As warfare evolves toward a more fluid state and by necessity armies change, the Mongols become more relevant.

I. Introduction

> Were the accounts of all battles, save those of Genghis Khan, effaced from the pages of history ... the soldier would still possess a mine of untold wealth from which to extract nuggets of knowledge useful in molding an army for future use ... [his] successes are proof sufficient of his unerring instinct for the fundamental qualifications of an army.
>
> He devised an organization appropriate to conditions then existing; he raised the discipline and the morale of his troops to a level never known in any other army,... he spent every available period of peace to develop subordinate leaders and to produce perfection in training throughout the army, and, finally, he insisted upon speed in action, a speed which by comparison with other forces of his day, was almost unbelievable. Though he armed his men with the best equipment of offense and defense that the skill of Asia could produce, he refused to encumber them with loads that would immobilize his army. Over great distances his legions moved so rapidly and secretly as to astound his enemies and practically to paralyze their powers of resistance.... On the battlefield his troops maneuvered so swiftly and skillfully and struck with such devastating speed that times without number they defeated armies overwhelmingly superior to themselves in number.
>
> ...he clearly understood the unvarying necessities of war. It is these conceptions that the modern soldier seeks to separate from the details of the Khan's technique, tactics, and organization. So winnowed from the chaff of medieval custom and of all other inconsequentials, they stand revealed as kernels of eternal truth, as applicable today in our efforts to produce an efficient army as they were when, seven centuries ago, the great Mongol applied them to the discomfiture and amazement of a terrified world.[1]

General MacArthur set down these words to provide a model for the preparation of the US Army to fight a modern war. His report provided the doctrine, training, organization, materiel, and leader development (DTOML) requirements that he saw as necessary for his five-year modernization plan.[2]

MacArthur looked to the past for fundamental principles and the combinations and applications of these principles that would produce success on the battlefield. He stated that facts derived

from the analysis of history and applied to the present and projected future provide a basis for developing appropriate method, organization, and doctrine for the US Army.[3]

This monograph follows General MacArthur's methodology. As the Army sets out to mold itself under the AirLand Operations concept, perhaps it should look back to the most successful practitioners of operational warfare, the Mongols. Mongol operational warfare may provide a useful model for AirLand Operations and the development of the corresponding doctrine, training, organization, materiel, and leader development.

The Mongols swept across Asia, the Middle East, and Eastern Europe in the 13th Century. Conducting swift and decisive campaigns, the Mongols conquered the largest contiguous empire the world has ever known. Contrary to popular belief, they did not win with overwhelming numbers. During their operations, the Mongols were usually outnumbered and at a technological disadvantage relative to their enemies.[4] Their success was a product of qualitative and not quantitative superiority. The only advantage the Mongols possessed was the superior quality of their doctrine, training, organization, (use of) materiel, and leader development.[5]

This monograph does not attempt to cover the entire history of the Mongols. The practices of Genghis Khan, creator of the conquering Mongol army, are taken as the foundation of the Mongol doctrine. The scope is limited to the examination of two Mongol

campaigns and the DTOML that gave them the capability to execute these campaigns.

This monograph begins with an examination of the AirLand Operations concept and the requirements it places on the Army. Then it reviews two major Mongol campaigns, one in the Middle East and the other in eastern and central Europe, to provide a historical basis for understanding and visualizing Mongol operational warfare. Next is an examination of the Mongol's DTOML to provide insight into how they gained the qualitative advantage that contributed to their success at the operational level. The monograph concludes with a discussion of the derived implications.

II. AirLand Operations

AirLand Operations (ALO) is the Army's current concept for how the Army will fight in the 21st Century. This warfighting concept provides the umbrella under which the Army will operate as the land component of future joint, combined, or inter-agency operations. The ALO concept guides the evolution of the current AirLand Battle doctrine into the doctrine for the Strategic Army of the 1990s and beyond.[1]

Concepts are visualizations of what the Army needs to do to win on a future battlefield. The Army develops concepts based on the study, analysis, and synthesis of history; current doctrine; projected threats; and emerging technologies. The result is the development of realistic and feasible forecasts of future conflict

and the requirements for the Army to fight and win in that conflict. Thus, concepts provide direction for the future Army, serve as a disciplined method to identify warfighting requirements, and aid in the prioritization of solutions.[2]

Concepts are future oriented while doctrine deals primarily with the present. Concepts identify required, but not yet attained, warfighting capabilities while doctrine is concerned with the application of current warfighting capabilities.[3]

The Army, through the Concept Based Requirements System (CBRS), uses concepts as the basis for the development of doctrine, training, organization, materiel, and leader development. The Army's CBRS not only identifies the specific warfighting requirements in each domain of DTOML but also integrates the solutions developed in the five domains. This method identifies and prioritizes DTOML warfighting solutions to eliminate deficiencies and exploit opportunities.[4]

The stated focus of ALO is at the operational level, that is, the level where the Army plans, resources, and executes major operations and campaigns.[5] To conduct operational level war, ALO identifies the stages of the operational cycle, the capabilities required by the Army to perform each of these stages, and the implications for the development of DTOML to execute this concept.

The ALO concept envisions the Army conducting operations by performing four interrelated functions referred to as the stages of the operational cycle. These four stages are: detection and

preparation, establishing conditions, decisive operations, and force reconstitution.[6]

Detection and Preparation. Detection and preparation include gathering information, movement planning, assessing intelligence, intelligence preparation of the battlefield, and staging and buildup of the force. During this stage the Army finds the enemy and prepares the battlefield while simultaneously building, securing, and deploying the force.

Establishing Conditions for Decisive Operations. During this stage, the Army uses all available means to set the conditions for the application of capabilities to achieve decisive results. The goal is to shape and condition the battlefield and the enemy to create conditions favorable for the employment of our forces.

Decisive Operations. These are the actions conducted to achieve the desired end state. At the operational level, this means the attainment of strategic goals. Successful accomplishment of the first two stages creates the conditions for success in this stage. Conditions for success allow committed maneuver forces to preserve themselves while decisively engaging and overwhelming the enemy. Forces combine maneuver, intelligence, and firepower to attain unmatchable tempo and decisive results. Decisive operations must sustain continuous momentum to deny the enemy any opportunity to recover his balance.

Force Reconstitution. The success of the first three stages facilitates force reconstitution by minimizing the destruction of our forces. This stage keeps the force prepared for follow-on or

new operations or campaigns. Force reconstitution, i.e., the constant renewal of combat power, is accomplished through continuous sustainment operations.

Following are the major capabilities the Army needs to execute the stages of the operational cycle.[7] During the detection and preparation stage there are three critical capabilities. The first is the early integration of reconnaissance, intelligence, surveillance, and target acquisition. Based on the intelligence gathered and processed, the next required capability is for the commander to produce an overall plan of operation and intent. The third capability is to deploy, build, and secure the forces necessary for the operation.

The required capabilities for the second stage, establishing the conditions for decisive operations, pertain to seizing the initiative while protecting and conserving the force. The commander attains the initiative through fires, positioning of forces, psychological operations, and deception. His aim is to disrupt, isolate, and separate the enemy both physically and psychologically. These actions render the enemy vulnerable and deprive him the ability to mass, synchronize, and coordinate combat power.

The necessary capabilities for stage three, decisive operations, are force agility, mobility, and the rapid generation of combat power. Widely-separated, dispersed forces must maneuver with effect to bring about the defeat of the enemy. Both physical and mental agility are essential to master and manipulate the

rapid flow of this battlefield. To facilitate command and control in such a fluid environment, subordinate commanders must operate on mission tactics, mission-type orders, and clearly-stated commander's intent and concept of operations.

Force reconstitution, the fourth stage, is dependent on the success of the first three stages to preserve the force. The ideal method for preservation is to minimize the destruction of the force. There are to two major capabilities needed for the fourth stage, force reconstitution. The first is the ability of the force to disperse rapidly and secure itself following decisive operations. The second is the capability to conduct continuous sustainment operations in order to provide the commander with the ability to retain the initiative, momentum, and freedom of action. The goal is a force poised to execute a full range of follow-on operations.

AirLand Operations require that the Army be versatile, deployable, lethal, and expansible.[8] This concept explains what we must do to meet the challenges of the future battlefield. The next task is to use this umbrella concept as a guide to the CBRS to develop the corresponding DTOML.

Institution of a new concept like ALO ensues changes in the development of the Army's DTOML. In the area of doctrine, the Army must refine and embed operational art and campaign planning into doctrinal manuals. Future doctrine must provide a balanced treatise on linear and nonlinear warfare. Doctrinal manuals must address the preparation of forces for deployment, power

projection, and the role and interplay of commander's intent, vision, initiative, mission tactics, and responsibility. The revised FM 100-5, Operations, must reflect the ALO concept because it serves as the basis for further evolution and development of doctrine.[9]

In the area of training, the Army must train commanders and staffs to exercise initiative while operating within the guidelines of the higher commander's intent and mission-type orders. The Army needs flexible and adaptable units and leaders to perform effectively throughout the full range of the operational continuum. Only tough and demanding training will produce the type of units, soldiers, and leaders who thrive in the fast-paced ALO environment. The employment of combined arms, both joint and of other nations, must be integrated into all training.[10]

The requirements of a smaller Army have significant implications for organization and force design. A smaller Army must be capable of projecting lethal power as part of joint and combined forces. Also, because of its reduced size, the Army must be more versatile and adaptable. It must be capable of rapid changes, whether these changes are expansion or a change of operating environment. Organizational design must enhance deployability, mobility, dispersed and decentralized operations, and the integration of combined arms (again multi-service and multi-nation).[11]

Materiel development must complement the emerging doctrine by

providing the physical means for a smaller Army. The Army must develop systems that are more lethal, deployable, survivable, durable, agile, robust, and possess greater range.[12]

The demands on leader development are greater but not necessarily different. The Army will continue its progressive and sequential development process, based on institutional training, operational assignments, and self-development. However, the diffused and dispersed battlefield will demand more of leaders. Leaders must think, plan, and execute operationally. A nonlinear environment demands leaders with the mental agility and flexibility to visualize the operation and quickly refocus and adjust as a matter of norm rather than exception.[13]

These capabilities already exist in the Army to some degree. The challenge is to integrate, efficiently and effectively, the development of all five domains. The goal is to produce the synergistic effect of the varied parts of a whole. Perhaps, the best way to achieve synergism is to have a common model as a basis. A model provides a point of reference from which to judge the design of an Army.

Returning to General MacArther's words, facts derived from an analysis of history and applied to the present and projected future can produce a valuable model for AirLand Operations and the development of DTOML. MacArthur regarded the Mongol army as the basis for such a model. Therefore, this monograph first examines two Mongol campaigns and then analyzes the DTOML that enabled them

to achieve extraordinary success in operational warfare over 750 years ago.

III. Mongol Operational Warfare

The Khwarazm Campaign of 1219 and the Central European Campaign of 1241 dramatically illustrate the devastating effectiveness of the Mongols at the operational level of war. The Mongol operations were unprecedented because of the vast distances involved, the intricate synchronization of operations, the dispersion of forces, and the deliberate planning, preparation, and coordination of operations.

These descriptors are indicative of a highly-trained, precisely-functioning, and well-led military machine rather than the imagined rampaging horde of savages. Additionally, the Mongols achieved success despite technological and numerical disadvantage relative to their enemies. The only advantage the Mongols had was the superior quality of their doctrine, training, organization, (use of) materiel, and leader development.

Khwarazm Campaign-1219[1]

In 1206, Genghis Khan unified the Mongols and formed the Mongol Empire.[2] By 1215, the Mongol army had overcome the great wall of China, captured Peking and conquered the Chin Empire.[3] In 1217, the Mongols signed a treaty of commerce ensuring free passage through Khwarazm. The Khwarazm Empire was the reestablished and expanded Persian Empire that today includes the

countries of Afghanistan, Iran, Russian Turkestan, and Pakistan. The Shah of Khwarazm, Muhammed II, Ali ad-Din, was at the zenith of his power and ruled from his capital city of Samarkand.[4] The Shah's army was fresh from their conquest of northern India. His army consisted of 400,000 high-quality soldiers equipped with chain-mail and steel armor and weapons.[5]

The conflict began when the Shah's governor slaughtered a Mongol caravan of 150 merchants in the fortress city of Otar. To protest this breach of faith, Genghis Khan sent an ambassador to Khwarazm. The Khwarazmians responded by killing the ambassador. Following this rejection, Genghis Khan faced the prospect of war or economic crisis due to the cut-off of trade. He chose war. In keeping with Mongol custom, Genghis Khan formally declared war on Khwarazm before commencing hostilities.[6]

A distinctive characteristic of Mongol warfare was the meticulous planning and preparation process. The Mongols followed specific steps in planning and preparing for every campaign. The first step was the development of the campaign plan, the basis for all their preparations. The Kuriltai or general council of senior commanders was responsible for developing the campaign plan. After analyzing the situation, the council determined the strategic and operational objectives and developed the plan. The plan included missions for major subordinate units, invasion routes, size and composition of forces, and the organization of supplies.[7]

Guided by the council's plan, the Mongols accomplished the

tasks of intelligence gathering, logistic preparation, mobilization of reserves, and training.[8] The Mongols ensured that every detail was painstakingly and systematically completed. They gathered information on enemy defenses, roads, weather, and logistical support assets along their routes of march and in the enemy country. For the Khwarazm campaign, they enlisted the aid of Muslim interpreters for intelligence work.[9] Detailed logistics preparation included establishing supply dumps of dried meat and positioning arsenals of weapons along the route of march. During this stage, the Mongols also built roads and bridges along the army's 2000-mile route of march, which crossed the Himalayas. These roads and bridges were broad enough for two carts side by side.[10]

In preparation for the campaign, the Mongol army of 150,000 massed in the Uighur territory of the upper Irtysh River.[11] They spent most of the summer of 1219 by the river conducting intensive training for the upcoming operations against the Shah. The Mongols used the time to train the mobilized reserves, which comprised two-thirds of the force, and integrate them into the standing army.[12]

While the Mongols were planning and preparing for the campaign, the Shah assumed a purely defensive posture.[13] He deployed his 400,000-man force in a 500-mile cordon along the Syr Darya River, garrisoning major cities. To the west, behind his 500-mile shield, the Shah waited in his fortress capital of Samarkand, his line of communications stretching back through Bokhara.[14]

The Mongol's plan was to destroy the Shah, cause the collapse of his army, and then destroy it piecemeal. The objective was the center of power, i.e., the reigning monarch. The Mongols avoided attacking the Shah directly. Instead, they chose to affect the center of power by attacking at the circumference.[15]

The Mongols attacked late in the summer of 1219. They always attacked on a broad front, in this case 500 miles wide. The campaign started as a two-pronged attack (north and south) with four columns. Each column was a corps-sized element with multiple Tumens or 10,000-man divisions plus separate Minghans or 1,000-man regiments of artillery and engineers. Distributed throughout the army were 10,000 Chinese artillerymen and seige engineers organized into regiments. The northern prong was the main attack and consisted of three columns. The first column, commanded by Juchi, had three divisions, the second column, under the command of Jagatai, had four divisions, and the third column had four divisions under Genghis Khan. The southern prong was the supporting attack; it consisted of the fourth column, commanded by Jebei, with three divisions.[16]

Each column had its designated line of operation, objectives, and missions. The Mongols synchronized the movement and actions of each column through careful planning and an effective command and control system. Through this synchronization, the columns created advantages for one another to bring about the methodical destruction of the enemy.[17]

Jebei attacked first. His target was the southern flank of

the 500-mile Syr Darya line. His line of operation extended toward the fortress cities of Khojend and Khurasan. He conquered these two cities then advanced from the south to threaten the centers of the Shah's power, i.e., the cities of Samarkand and Bokhara. Jebei's attack succeeded in accomplishing three objectives: first, it protected the movement of the Mongol's main body that was attacking the north end of the Syr Darya line hundreds of miles away; second, it caused the Shah to commit his 50,000-man reserve (which Jebei subsequently destroyed) against this supporting attack; and third, it caused the Shah to remain focused to the south, away from the Mongol's main attack.[18]

Protected by Jebei's supporting attack in the south, Juchi and Jagatai led the main attack into the Shah's northern flank. First, they penetrated the Khwarazm lines. Next, they separated into two columns of three divisions each and fixed the Shah's forces on the cordon by conducting a shallow envelopment behind the Syr Darya defensive line. Third, they systematically attacked and reduced the strong points along the cordon of the Syr Darya line. Genghis Khan and his four divisions followed Juchi and Jagatai through the initial penetration and continued in a deep attack, going west into the Kizil-Kum Desert.[19]

The Shah fell victim to the sequencing and simultaneity of the Mongol operations. Juchi and Jagatai had the Shah's main defensive line pinned down and were systematically destroying it. The Shah had already committed his reserve against Jebei's relentless advance on Samarkand from the south. Then, seemingly

out of nowhere, Genghis Khan appeared at the gates of Bokhara, 400 miles in the Shah's rear, astride the Khwarazmian line of communication.[20]

Genghis Khan's deep attack took him 400 miles across a desert that the Khwarazmians deemed impassable. According to the noted military theorist, B. H. Liddell Hart, the maneuver was the most dramatic surprise in the history of war. Genghis Khan descended upon Bokhara with such suddenness and surprise that the Shah, thinking himself outnumbered and encircled, abandoned his capital of Samarkand in terror. Now, with perfect timing, all four columns fell upon Samarkand. Jagatai attacked from the north, Jebei from the south, Juchi from the east, and Genghis Khan from the west.[21]

The campaign ended when the terrorized population of Samarkand surrendered on 12 March 1220 after a five-day seige. With the Shah in flight and the capital gone, the Mongols succeeded in decapitating the Khwarazm government. This decapitation caused the subsequent paralysis of the Shah's army and enabled the Mongols to destroy it piecemeal.[22]

The Shah died as a fugitive on 10 January 1221.[23] As the reigning monarch, he failed to acquire the requisite knowledge and appreciation for the skill of his enemy and never developed an operational plan. He remained purely defensive. His actions appeared uncoordinated, and he moved only in reaction to the Mongols.[24]

In contrast, the Mongols, working at the operational level of

war, fought a campaign that was brilliantly conceived and harmoniously executed. The campaign's distributed operations were a sustained and perfectly coordinated succession of blows. The Mongol's skill at operational warfare kept the Khwarazmians off-balance and totally bewildered enabling the Mongols to concentrate superior force at each stepping stone of the campaign.[25]

Throughout the campaign each corps-sized Mongol column maintained its mission-orientation. Each column attained its objectives and timed its movements to provide security or opportunities for the other columns to exploit.[26]

The Mongols successfully attacked and destroyed the Khwarazmian government, people, and army with incredible speed, precision, and timing.[27] In five short months, in a calculated and orderly sequence, the Mongols paralyzed and then decapitated the government, created terror that sapped the will of the people, and annihilated the army. This 13th Century Blitzkrieg demonstrated the ability of a numerically inferior force to fight and win through planning, preparation, superior mobility, effective command and control, and operational execution.

INVASION OF CENTRAL EUROPE-1241[28]

The invasion of Central Europe in 1241 also illustrates the devastating effectiveness of Mongol operational warfare.[29] Central Europe posed a formidable objective for the Mongols. They had to engage and defeat some of the continent's largest, most powerful armies and rulers, i.e., Poland (Boleslas the Chaste),

Silesia (Henry the Pious and his Poles, Bavarians, Teutonic Knights, and Templars from France), Bohemia (Wenceslas and his Austrians, Saxons, and Brandenburgs), Galacia (Mieceslas), and Hungary (Bela).[30]

The campaign's commander was Batu, grandson of Genghis Khan and first leader of the Golden Horde. Following his conquest of Russia in 1239, Batu spent the next two years consolidating his administration and gathering intelligence on Europe. In this campaign and every other Mongol campaign, the first step was meticulous planning and preparation.[31]

As a result of this preparatory process, Subedai, the senior planner, was extremely knowledgeable about the European strengths and weaknesses (particularly the political environment and dispositions of the enemy) before embarking on the campaign. Conversely, the Europeans knew almost nothing of the Mongols.[32]

In preparation for the invasion, the Mongol army of 100,000 troops massed at Lemberg-Przenzsl. The Mongols organized into four columns for a three-pronged (north, center, south) attack. The northern prong was a supporting attack consisting of one column (each column was a corps-sized element) of three divisions commanded by Kaidu. The center prong was the main attack and consisted of two columns of three divisions each. Batu and Subetai each commanded a column. The southern prong was also a supporting attack and consisted of the fourth column of three divisions commanded by Kaidan.[33]

The Mongol's plan was to attack the enemy's points of

mobilization and destroy the enemy armies separately before they could concentrate against any of the Mongol columns.[34] Again, each column had its designated line of operation, objectives, and mission. Despite their wide dispersal, the columns operated in harmony with one another. The Mongols attained this harmony through planning, precise coordination and synchronization of movement and actions.[35]

The army attacked in the standard broad front; here the front covered 600 miles.[36] As the supporting attack in the north, Kaidu launched first, crossing the Vistula River in early March 1241.[37] His right flank swept through Lithuania and east Prussia along the Baltic into Pomerania.[38] He conquered the major cities of Cracow and Breslau; destroyed the 40,000-man allied army of Silesians, Poles, Templars, and Hospitalers at the battle of Liegntz; and effectively broke all resistance in Poland and Silesia from the Vistula river to Liegntz.[39] While the battle of Liegntz raged, Wenceslas and his 50,000-man Bohemian force were only two days march away and were enroute to join the allies. However, upon hearing the news of the allied defeat, Wenceslas quickly withdrew to the northwest. Kaidu continued forages through Moravia while keeping the Bohemian army at bay, 250 miles away from the other European armies in the south.[40]

In less than a month, Kaidu secured the northern flank and destroyed or neutralized all enemy forces.[41] The northern prong had marched 400 miles, fought two decisive battles, took four great cities, conquered Poland and Silesia, and stood poised on

the flank of the Austrians.

Kaidan, commander of the supporting attack in the south, attacked between the Danube and the Carpathians at the Iron Gate.[42] In his drive through Moldavia and Transylvania, his army maintained a rate of march of 40 miles per day.[43] Kaidan defeated the Magyar army and conquered the old German settlements of Hermannstadt and Weisenburg (now Alba Julia and Sibiu).[44] After three pitched battles in Transylvania, resistance collapsed.[45] The Mongols continued to ravage the area to create as much chaos as possible. This chaos kept the Europeans paralyzed and incapable of uniting to assist their allies to the north.[46]

Batu and Subetai commanded the main effort in the center. They advanced along three lines of operation, fighting their way through the Carpathians, covering 200 miles in a four-day period from 12-15 March.[47] The two outer lines of operation moved on the circumference. The center line of operation followed the diameter. The Mongol forces converged, through a closely-linked and perfectly-timed operation, on the Danube in front of Gran. There, Batu and Subetai conducted a demonstration that held Bela and his 100,000-man force in place while the Mongol attacks on Bela's allies to the north and south were underway.[48]

The demonstration successfully captured Bela's focus and prevented the Europeans from helping one another. With their prey (Bela) snagged, Batu and Subetai started a feigned operational retreat to the east. They moved slowly so as not to lose the

pursuing Bela. The retreat continued for six days until 9 April 1241.[49]

Through planning and effective command and control, the Mongols achieved faultless operational execution. While Bela blindly pursued, Kaidu and Kaidan annihilated his allies to the north and south. On 10 April 1241, Kaidu destroyed the Silesians at Liegntz in the north; Kaidan stormed Hermannstadt and destroyed the Magyar army in Transylvania 500 miles away; and Batu and Subetai conducted a personal reconnaissance at the future site of the Sajo River battle.

By 11 April 1241, the Mongols had secured their northern and southern flanks and isolated Bela and his army 100 miles from their base at Buda-Pest. Now, on ground of their choosing, Batu and Subetai turned on Bela at the Battle of the Sajo River and destroyed him in classic Mongol fashion. They employed coordinated combined arms in devastating fire preparation (solid, explosive, and incendiary projectiles), fire in movement (arrows and javelins), holding and enveloping maneuvers, encirclement, ambushed escape, and relentless pursuit. Bela lost his entire army with at least 70,000 killed and the remainder scattered across the 100 miles back to Buda-Pest.[50] According to military historian Trevor Dupuy, not more than 20,000 Europeans survived the battle and pursuit.[51]

In a six-week period, while fighting and defeating forces five times their size, the Mongols succeeded in annihilating the major armies of Central Europe.[52] The Mongols now controlled central

Europe from the Dneiper to the Oder and from the Baltic to the Danube. The whole of central Europe lay open to them. The Mongols advanced into Austria as far as Nieustadt and began preparations to invade Italy, Austria, and Germany.[53] However, before they could execute the next phase of their invasion of Europe, Ogatai, the reigning Khan, died. The conquest of Europe would have to wait. In compliance with Mongol law, the leaders returned to the Mongol capital for the election of the new Khan. Europe was spared, but Russia would wear the Mongol yoke for the next 240 years.[54]

The Mongols achieved victory not by superior numbers or materiel but by combinations of planning, preparation, effective command and control, superior mobility, and operational execution. Through these combinations, they conducted and orchestrated major operations hundreds of miles apart with devastating precision. Their planning and superior mobility allowed them to operate within the enemy's decision and action cycle. Their ability to control and operationally execute the independent, but cybernetically-linked, operations of the widely-dispersed and rapidly-moving Mongol army allowed them to move and act faster than the enemy could react to them. As a result, the Europeans never fathomed the campaign that the Mongols were methodically waging against them. The Europeans never coalesced physically or mentally to formulate a coherent plan of attack and so surrendered all initiative to the numerically inferior Mongols.

As these two campaigns have shown, the Mongol army succeeded by skillfully conducting war at the operational level. The Mongols demonstrated the ability of an army to defeat numerically superior and technologically advanced enemies through operational warfare. The question must inevitably follow of whether a 20th Century army, with the benefits of modern technology, could match the success of the Mongols. The answer to this question lies in first gaining an understanding of the Mongol army. The next section seeks to do this by examining the Mongol's doctrine, training, organization, materiel, and leader development.

IV. Mongol DTOML

Doctrine

The Mongol's concept and methods of operational warfare displayed an all encompassing approach to war. They waged war across the human spectrum; they viewed war within the larger scope of the constant dynamism of human conflict. Their warfare included not only the military dimension but the political, economic, and psychological dimensions as well.[1] The historian, Harold Lamb, describes Mongol warfare in this way:

> Their purpose in war was not to win battles but to destroy the power of resistance of the enemy...[by conducting]..a series of operations designed to crush morale and manpower...[They conducted]...war to the uttermost - deliberately planned destruction carried out, often at incredible speed.[2]

The Mongols sought to destroy the Clausewitzian trinity at every level of war. At the strategic and operational levels, they

sought the moral collapse of the people through terror, paralysis of the government through decapitation, and destruction of the army through isolation and piecemeal annihilation.[3]

The Mongol doctrine rested on seven pillars: setting the conditions for success, use of the indirect approach, superior mobility, dispersion, disciplined command and control, deception, and combined fire and shock action. These seven pillars also formed the basis for their training, organization, materiel, and leader development.

Setting the Conditions for Success. The Mongols used three phases: preparation, penetration, and decisive operations to set the conditions for success.[4] During the preparation phase, they gathered and processed information into intelligence. This intelligence was the essential element for preparation and the basis for all planning. The Mongols formulated the campaign plan based on the thorough study and evaluation of this intelligence.[5]

Campaign planning was the responsibility of a council composed of senior commanders who were Orloks or marshals of the Mongol army. The council developed all aspects of the campaign plan to include the size and composition of the force, provisioning, lines of operations, objectives, missions for major subordinate units, main points of concentration, and mobilization requirements. Once the council formalized the plans, subordinate commanders had wide latitude to decide how best to accomplish their missions. The only requirement was to remain within the intent and general

guidelines of the overall plan.[6]

The Mongols believed that an error in planning was more dangerous than an error in execution. Hence the impetus for their meticulous campaign planning and preparation, a process that took months or years.[7]

The Mongols used every weapon of war, including politics and psychology, to set the conditions for success. Political agents used propaganda to sap resistance; and malcontents, both rich and poor, sowed seeds of dissent to undermine the strength of the enemy government and people. These Mongol spies and agents spread rumors and falsehoods to intimidate, confuse, and terrorize the enemy's people, government, and army. Therefore, the Mongols already possessed a decisive advantage over the enemy before they even entered his country.[8]

Penetration was the second phase of setting the conditions for success. During this phase, the Mongol army maneuvered their corps-sized attack columns across a broad front. They used this broad front approach for several reasons. First, it gave the impression of great numbers of attack forces. Second, through a carefully prepared movement plan, they could move at speeds the enemy could not match. Speed gave them the momentum for the penetration as well as surprise and deception. Speed and dispersion also denied the enemy a clear picture of the Mongol's locations or intent.[9]

The Mongols understood that force was the product of mass and acceleration or speed ($F = MA$). However, they did not take the

simplistic approach of increasing either mass or speed to gain force. Instead, they increased force by combining speed, precision, coordination, and synchronization with mass to produce a synergistic effect.[10]

The third phase was decisive operations. Mongol operations were overwhelmingly offensive. The Mongols always assumed the offensive to gain the initiative. They believed that security lay in power and therefore attacked relentlessly. They employed every means available to prevent the enemy from gathering strength to oppose them. At the start of a campaign, the Mongols took calculated risks to stun and subsequently destroy resistance.[11]

The Mongols always sought operational effect by orchestrating the action and movement of the dispersed columns. Through the meticulous timing of their operations, each column either worked to create an opportunity for another column to exploit or exploited an opportunity created by another column.[12]

Rather than seek one decisive battle, the Mongol's strategy kept the enemy confused and constantly moving. If broken, they drove the enemy in ruthless pursuit. If unbroken, they enticed the enemy forward to wear him down and stretch out his forces.[13]

The Mongols avoided close combat whenever possible. They employed tactics only after rendering the enemy two-thirds beaten by strategy, his line of communications cut, and his army demoralized. For the Mongols, unnecessary loss of their troops was the greatest sin.[14] Only when the conditions were set for victory would the Mongols physically engage the enemy.

Use of the Indirect Approach. This pillar of Mongol doctrine was the essential element of Mongol warfare. Paradoxically, while the Mongols were cautious and avoided battle if possible, they would relentlessly attack the enemy's center(s) of power.[15] They sought to win by movement and strategy rather than close combat. They pinned the enemy to the defense of important fortified points by striking along multiple axes and preventing him from concentrating superior force at any one point. The Mongols avoided massed battles by refusing to make frontal assaults. They always sought the flanks and rear of the enemy by either drawing in the enemy, moving around him, or a combination of the two. The Mongols understood the demoralizing effect of an attack from the rear and the advantages of superior mobility.[16]

Superior Mobility. The Mongols countered numerical superiority with superior mobility. Through mobility they could seize the initiative and select the point and time of decision.[17] Normally moving at twice the speed of their enemies, mobility gave the Mongols the same advantages that concentration gave slower armies. Mobility gave them superiority of fire at decisive points, security, and striking power through momentum rather than mass.[18]

The Mongols used mobility to disperse rapidly, move, concentrate, unite in effort, and disperse repeatedly in order to keep the enemy confused and off-balance. Through superior mobility, they could maintain the pressure of a relentless attack and concentrate overwhelming combat power against fragmented enemy

forces. With precision and speed, the attacks by their hard-hitting, mobile formations consistently defeated stronger enemy forces. The Mongol's superior mobility is attributable to their organization, training, planning, preparation, and command and control system.[19]

Dispersion. The Mongol's dispersion set the conditions for the enemy's defeat in detail, i.e., increasing uncertainty about the Mongol's intentions caused the enemy to dissipate their combat power. Dispersion gave the Mongols not only speed and mobility but also a weapon and shield. The Mongols used dispersion to manipulate the campaign operationally as a weapon against the enemy, e.g., the thrust of one column creating an opportunity for another column to exploit.[20]

The Mongols also used dispersion as a shield. They believed a physically concentrated army was vulnerable to the attack of an equally concentrated army. Therefore, they saw strength and power in a moving, dispersed force and weakness in a stationary, massed force.[21]

Disciplined Command and Control (C2). The Mongols consistently demonstrated the ability to maneuver operationally and strike in perfect harmony while dispersed over hundreds of miles. They coordinated the actions of their forces all toward a unified end. To maintain C2 of their dispersed forces, the Mongols developed an effective and decentralized system. Mission-type orders, training, and confidence in subordinates formed the basis of this system. Their C2 system produced

seemingly effortless maneuver and movement with all elements working in concert.[22]

The Mongol C2 system had three tiers. The base tier addressed C2 at the individual level. To develop and maintain a disciplined force, they used the Yasak or code of conduct. This code imbued a philosophy of cooperation, mutual trust, and allegiance to the unit and the nation.[23]

The next two tiers addressed C2 at the tactical and operational level.[24] At the tactical level, regiment and below for the Mongols, the philosophy of C2 was the disciplined performance of maneuvers that resembled battle drills. Although rigid in conception, the execution was flexible; the goal was speed and accomplishment of the objective.[25]

The Mongols were classic exponents of mission-oriented command or the German Auftragstaktik.[26] This is most evident at the operational level. Commanders issued mission-type orders and let subordinates decide how best to accomplish the mission. This freedom gave subordinates the flexibility to act when the unexpected occurred or under conditions of uncertainty.[27] Freedom of action, mutual trust, and loyalty created a medium for great military efficiency.[28]

The Mongols used a simple physical C2 system. At the tactical level, they used visual (flags, lanterns, incendiary arrows) and audible (drums, gongs, whistling arrows) means. At the operational level, they used the Yam or courier system. Mongol armies established courier stations along their lines of

communications. When combined with mission-type orders, this C2 system allowed Mongol commanders to control armies hundreds of miles apart with absolute precision.[29]

Deception. The Mongols used any means to gain an advantage, reduce their losses, secure their movement, produce moral effect, set conditions, or increase the problems of the enemy. These stratagems included the extensive use of deceptions that were essentially psychological operations. The Mongols recognized the value of using psychology as a weapon and the effectiveness of paralysis induced by terror, dissent, or confusion. They preceded every campaign by spreading rumors exaggerating the size of their force and creating dissent in the enemy ranks.[30]

Mongol operations included deceptive maneuver and use of dummies and decoys. Their common ruse was the feigned retreat to lure the enemy into traps. They frequently used stuffed dummies on spare horses, disguised supply columns as merchant caravans, and erected mock campsites.[31]

Combined Fire and Shock Action. The Mongols resorted to fire and shock action only after setting the conditions for the enemy's defeat. First, fire brought the enemy to the point of collapse, then the Mongols used shock action by close combat. The Mongols avoided the high casualties of the melee by using mobility and fires in combination to fix, disrupt, disorganize, and destroy the enemy. The attack consisted of an artillery preparation, repeated attacks by fire to disrupt enemy formations and create gaps, a flank or rear assault by shock forces, and concluded with

eliminating the scattered remnants of the enemy.[32] Christopher Bellamy, military theorist, calls the Mongol concept of operations the perfect combination of firepower, shock action, and mobility.[33] B. H. Liddell Hart, credits the Mongols as the inventors of the artillery preparation. [34] To generate an intensive fire preparation, they routinely massed the fires of vast quantities of both heavy and light artillery.[35]

This concept and doctrine provided the foundation for the Mongol way of war. However, it was the interfusion of doctrine with training, organization, materiel, and leader development that created the capability to execute successful operational warfare.

Training

Every aspect of Mongol training was in concert with their concept and doctrine for operational warfare. Their training reflected the meticulous attention to detail and comprehensive approach that exemplified the Mongol approach to war. The Mongols did not view training as a short-term or haphazard affair. They believed that it took four to five years of training to develop officers and troops into a cohesive, flexible, force capable of independent operations.[36]

The Mongols based their training on two premises: the army trained as units not as individuals, i.e., individual training was conducted only as part of unit training and large-scale maneuvers, and leaders were responsible for training their units and men. The leaders were trained first, they in turn trained their troops.[37]

The training program was comprised of unit training, formal schooling, and large-scale maneuvers. Unit training consisted of mastering battle drills. The Mongols were experts with the tools of war, and they were possibly the best-trained soldiers in battle drill.[38] They gained precision through constant practice and rehearsals of operations. All elements moved in unison and their formations executed precise maneuvers in total silence.[39]

The formal school system was the Mongol War Academy or Staff College for the training of leaders. This formal school was part of the Kashik or Imperial Guard Division. Started as a school of seige warfare, it grew to include cavalry operations and staff functions. Selection was competitive and the opportunity to command above the Jagun or troop level depended on successful attendance.[40]

The Mongols conducted two types of large-scale field exercises. The first was the "sham battle" or force-on-force exercise. Divisions and below conducted these exercises.[41] The second type of exercise was the "Great Hunt" or Battue and involved the entire army. The Great Hunt was the Mongol's army-level training. This exercise was the training ground for warriors and a tactics lesson for leaders on how to control large units spread out over great distances. The Great Hunt commenced at the start of each winter and lasted from one to three months.[42]

While basically a food-gathering exercise, the Mongols conducted the Great Hunt like a campaign in full battle-dress.

They centered the main army with the left and right wing armies to the flanks along a start line eighty miles long. The finish point lay hundreds of miles away. The wings advanced ahead of the center sweeping forward as a giant crescent driving the prey before it. The Mongols maintained C2 by the same signals and messenger system used in war. The exercise concluded with a massive double envelopment and phased into a contracting encirclement.[43]

As designed, these exercises fostered team spirit, tempered discipline, and boosted morale. The Mongols critiqued and analyzed each operation as if they were on campaign.[44] During these exercises, a habit developed where each man learned what his role was, what to do, and under whose command he belonged.[45]

A philosophy of constant learning and adaptation is evident throughout the Mongol army. The Mongols were constantly seeking to improve, e.g., they learned the value of drill and trained maneuver from the Chinese.[46] Also, immediately after major operations, the Mongol army staff analyzed the events and implemented changes through a systematic training program.[47]

Organization

The Mongol organization was simple and functional. The significant characteristics of the Mongol organizational structure were its decimal basis, the composition and roles of the main striking force, the role and integration of auxiliaries, support personnel and organizations, and the general staff.

Organizational Structure and Decimal Basis. The Mongols based their force structure on groups of ten:[48]

Troops	Unit Name	Western Equivalent	Composition
10	Arban	Squad	10 Troopers
100...	Jagun	Troop	10 Squads
1000	Minghan	Regiment	10 Troops
10,000	Tumen	Division	10 Regiments

They organized their forces into three main armies (east, west, and center). Each army consisted of two or more divisions and several regiments of artillery and engineers according to the mission.[49]

Composition and Roles of the Main Striking Force. The divisions were the main striking force. They consisted of 40 per cent heavy cavalry for shock action and 60 per cent light cavalry for reconnaissance, screening, firepower (archery and javelin), support of heavy cavalry, mopping up, and pursuit.[50]

Role and Integration of Auxiliaries. There were two elements of the Mongol army, the nomadic tribesmen who comprised the cavalry and the sedentary Cherigs or auxiliaries from the conquered territories. The auxiliary forces comprised the infantry, artillery, and engineer units.[51]

Support Personnel and Organizations. The army evolved from a self-sufficient force to one reliant on logistic units and specialists for support. The growth of the army and distances it had to traverse caused this evolution. The Mongols employed specialist support personnel and organizations. These specialists

ranged from Chinese and Persian physicians operating aid stations to officers responsible for the movement of the army and setting up of camps.[52]

The Yurtchi was one of these specialists and was the equivalent of a modern quartermaster. He was responsible for logistical support as well as reconnaissance and intelligence.[53] A large portion of the Mongol's success is attributable to the discipline and rigor of their logistical organization.[54]

General Staff. The Mongols employed a general staff to assist army commanders. This staff consisted of senior leader advisors and an administrative staff of scholars, officials, logisticians, and other specialists.[55] This staff included Chinese scholars who made detailed maps, collated intelligence reports, and conducted civil administration.[56]

Materiel

The Mongol implements of war reflected their meticulous attention to detail and the harmonious manner in which they operated. The Mongols designed their equipment for mobility, firepower, and striking force, not static defense. They surprised and overwhelmed their enemies by using speed, volume, and rapidity of fire to concentrate the maximum amount of firepower at the point of decision.[57]

The Mongols learned about artillery from the Chinese but adapted it to meet their needs. Besides solid projectiles, the artillery used incendiaries made of quicklime and naptha,

explosive projectiles with gunpowder, gas bombs, burning tar for smoke screens, and cannon artillery.[58]

The Mongols expected each trooper to produce a rapid volume of fire. To accomplish this, they equipped their archers with a composite bow (with a pull twice that of the English longbow, 166 pounds versus 80) and armor-piercing, general purpose, and incendiary arrows.[59]

The Mongols found true advantage in their attention to detail. They created advantages through simple actions such as coating the bow with lacquer so it could be used in the rain and tempering the arrowheads to give them the advantage of steel over iron armor.[60] To reduce casualties, the Mongols issued each trooper an undershirt of raw silk. This shirt was impenetrable to arrows. It absorbed the impact of the arrow, eased the extraction of the arrow tip, and mitigated the severity of the wound.[61]

Leader Development

The Mongol's leader development was perhaps the integral element contributing to their success. The Mongols comprehended the primacy of the human, i.e., leadership was the element necessary to bring all the components of warfare together. Their leader development operated on a system of mutual trust and loyalty, intellectual discipline and training, and a leader selection system based on merit.[62]

As mentioned in the section on C2, the code of conduct formed the basis for the mutual trust and loyalty in the Mongol army. The Mongols promoted this trust by action. Leaders used

mission-type orders and gave subordinates wide latitude to accomplish objectives. Leaders made every effort to teach their subordinates and provide opportunities to lead. During training, the Mongols permitted and encouraged initiative and risk taking. This leader development system produced high-quality, self-reliant officers with initiative.[63]

The Mongols demanded intellectual discipline of their officers.[64] They took for granted physical bravery and endurance, concentrating instead on intellectual development. The Mongols taught their leaders to weigh alternatives, evaluate courses of action, and make decisions in a rapid but disciplined manner. By necessity, their leadership and decision-making was decisive and swift.[65]

The Imperial Guard Division was the training ground for future leaders. There, troopers learned the basics of command through such methods as attending councils and briefings. The Mongols systematically evaluated all Imperial Guard Troopers and classified each according to skill and leadership potential.[66]

The promotion system was a significant element of Mongol leader development. The Mongols selected leaders strictly on merit and ability, not seniority. This selection and advancement system contributed to the mutual trust and loyalty between the leaders and their men.[67]

Integration of DTOML

The Mongols attained operational advantage and harmony by integrating the five elements of DTOML. Through careful planning

and preparation, the Mongols set the conditions for quick and decisive campaigns. They suffered minimal losses while constantly overwhelming a numerically superior enemy through distributed operations, speed, synchronization, firepower, and C2. The Khwarazm and Central European Campaigns illustrate the devastating effectiveness of operational warfare when every aspect of DTOML is interfused to execute a focused concept of warfare.

In consonance with General MacArthur's view that the past provides insight to the future, this monograph looked to the past to gain insight into the Army's future concept of AirLand Operations. After examining Mongol operational warfare and analyzing their DTOML, the next step is to determine the implications in light of AirLand Operations.

V. Implications

AirLand Operations is the Army's concept of warfighting in the 21st Century. It focuses at the operational level of war and identifies capabilities required to fight and win on future battlefields. The ALO concept envisions the Army conducting campaigns in an operational cycle consisting of four interrelated functions or stages: detection and preparation, establishing conditions for decisive actions, decisive operations, and force reconstitution.

The warfighting goals in the ALO concept and those of the Mongols appear to be the same, i.e., seek victory through a quick

and decisive campaign with minimal loss of forces by overwhelming the enemy through speed and firepower. ALO and Mongol operational warfare essentially follow the four stages of the operational cycle and even the battlefields, past and forecasted, share the same nonlinear quality.

Over 750 years ago, the Mongols mastered the major capabilities that the ALO concept purports as necessary for the execution of the operational stages. During the preparation stage, the Mongols performed the critical ALO requirements in the areas of gathering intelligence, planning, and preparing the force. In establishing conditions for decisive operations, the Mongols deprived the enemy of the opportunity to mass, synchronize, and coordinate combat power. During decisive operations the Mongols most closely approximated ALO through the near perfect generation of combat power, agility, and mobility to obliterate enemy armies. They used corps-size armies dispersed over hundreds of miles and guided by mission-type orders and commander's intent to manipulate the rapid flow of battle. They also used the success of the first three stages to facilitate the fourth stage, force reconstitution. The Mongols preserved their force by minimizing losses and providing continuous sustainment through a responsive and robust logistical support system.

As stated in TRADOC PAM 525-5, the ALO concept will precipitate changes in the development of future DTOML. The Army must develop the doctrine, training, organization, materiel, and leader development to give it the capability to execute the

AirLand Operations concept. The logical model for this development should be what Trevor Dupuy called, "one of the best organized, trained, and disciplined armies ever created," the Mongol army.[1]

This revelation is not new. Leaders of the past such as Gustavus Adolphus, Napoleon, Rommel, and Patton studied the Mongols.[2] The Germans are credited with being the first to analyze the Mongol campaigns from a military point of view. This study occurred in the early to mid-1800s, the approximate time they developed the concept of Auftragstaktik.[3]

The Mongols are probably the antecedents of the Russian military system. The Mongol influence is most apparent in the Russian's maneuver warfare, scale of thinking, concept of the breakthrough followed by encirclement and pursuit, deep operations theory, emphasis on the operational level of war, and reliance on mobility and firepower.[4] This relationship is beyond the capability of this monograph to address adequately and may be worthy of follow-on study and analysis. Such a study may prove advantageous in understanding the roots of our former enemy's military system.

Just as other armies studied the Mongols, the Mongols turned to the Chinese for answers on the development and operation of the Mongol military system. The influence and transfer of knowledge and technology may have been slow, but it is traceable.[5] Implicit in the stratagems followed by the Mongols is the influence of Sun Tzu's Art of War. Mongol characteristics such as

speed, use of initiative, harmony, and variety can be found in Sun Tzu's writings.[6] Perhaps this is why John R. Boyd, military theorist, uses the Mongol way of war as an example of successful operational warfare and bases his counter-blitz theory on Sun Tzu.[7] Unfortunately, this connection is beyond the scope of this monograph to examine but deserves further study and analysis.

Commonality exists between the goals of AirLand Operations and the Mongol's accomplishments in operational warfare. This commonality may justify using Mongol operational warfare as one of the models for developing future Army doctrine, training, organization, materiel, and leader development. This precedent may already exist in the Russian army. Perhaps the theoretical roots for this type of warfare can be traced back twenty-four centuries to Sun Tzu. The past may prove to be the best source for answers to the future.

VI. Summary

This monograph began by examining the AirLand Operations concept and the requirements it places on the Army. This was followed by an analysis of the Mongol army, which Christopher Bellamy calls, "the most perfect military system this planet has ever seen."[1] This examination and analysis uncovered a possible connection between the past and the future as the similarities in philosophy, structure and design appeared. The operational warfare practiced by the Mongols over 750 years ago may be the

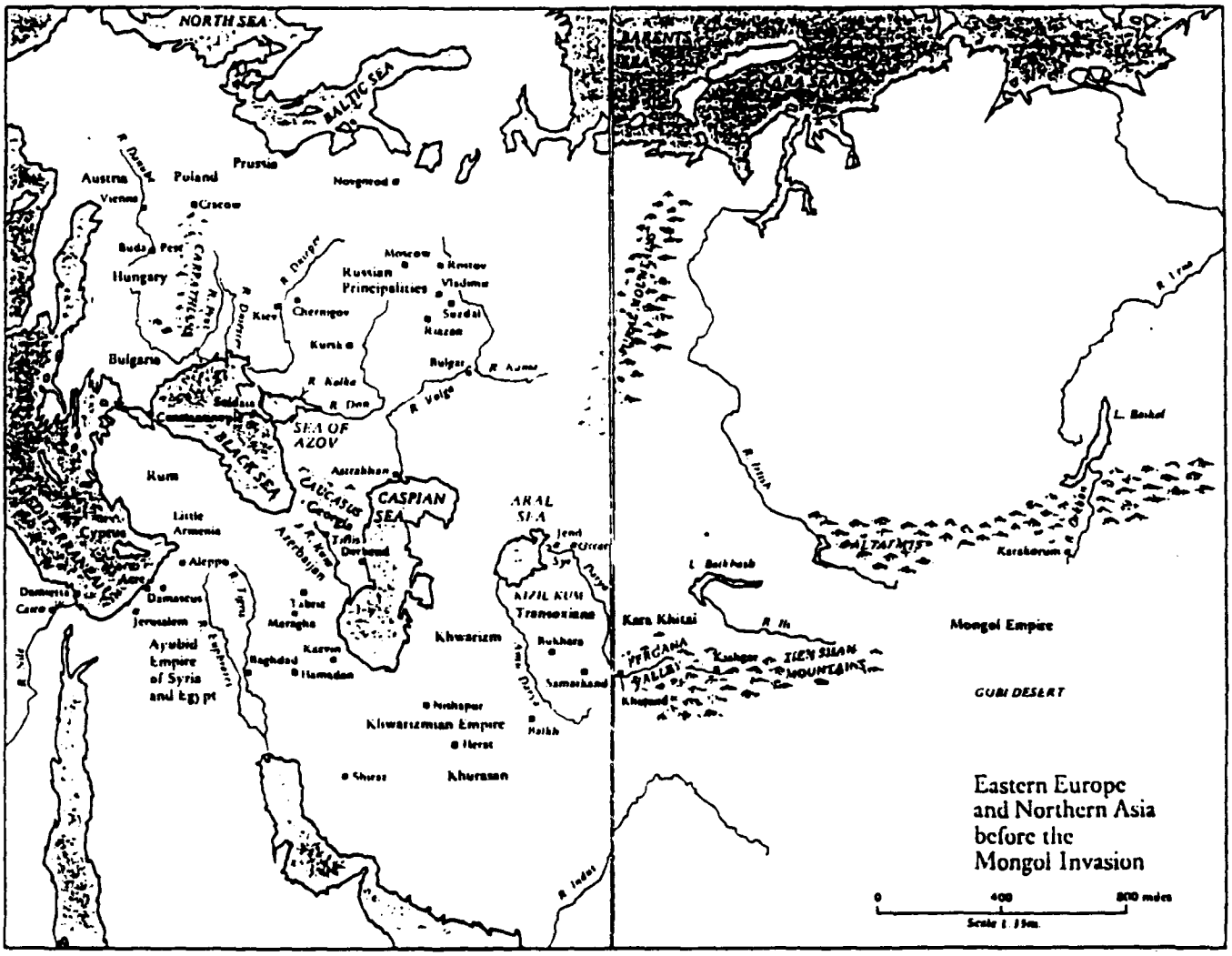
antecedent of the AirLand Operations concept. Based on this conclusion, Mongol operational warfare may provide a useful model for the AirLand Operations concept.[2]

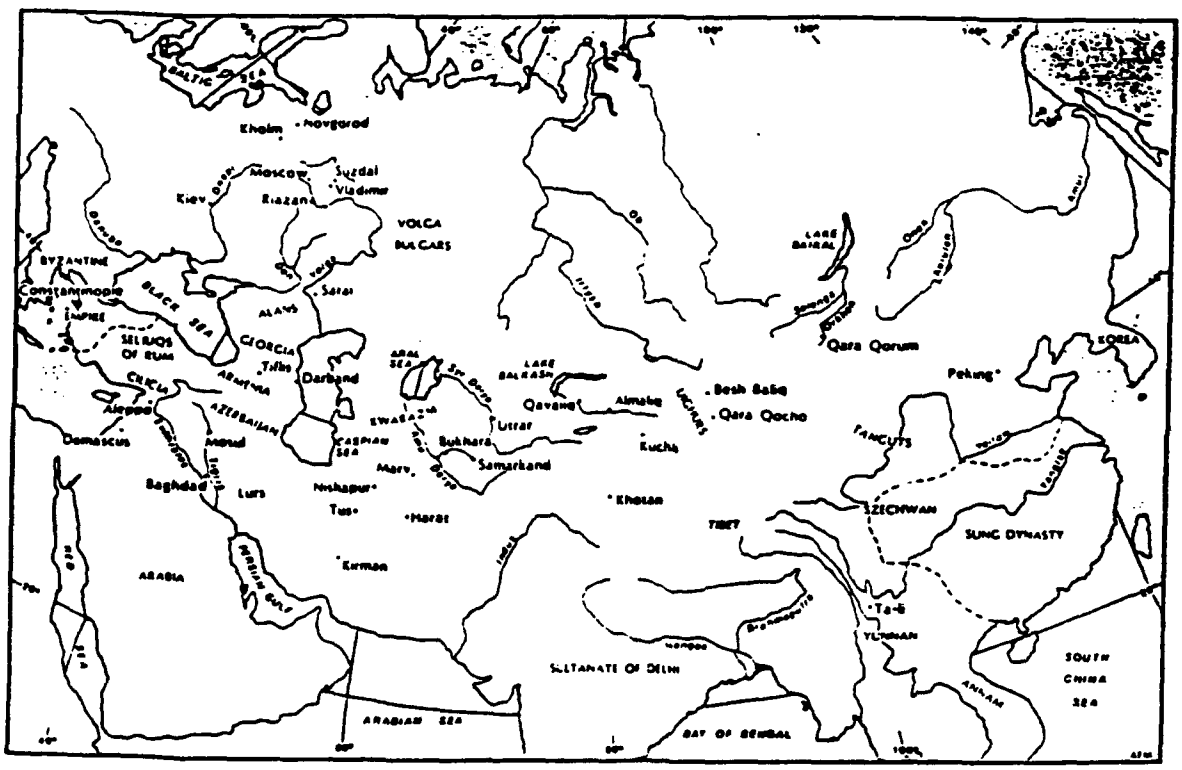
The passage of time and modern developments are taking us closer to, rather than farther away from, Mongol operational warfare. Modern economics and technology dictate that future armies must be smaller and more potent. As armies get smaller and battlefields expand, operations will become more diffused and dispersed.[3] Modern society and politics demand quick, decisive victory with minimal casualties. Armies of the future must, as the Mongols did, win wars by qualitative not quantitative means.

As warfare evolves toward this more fluid state and armies shrink in size, the accomplishments of the Mongols take on a renewed significance and relevancy. Their ability to develop and implement a DTOML that enabled them to defeat numerically and technologically superior enemies at the operational level of war deserves attention and further study. If the Army is to remain a credible strategic force, it must operate, fight, and win at the operational level of war as envisioned by the AirLand Operations concept. The most efficient means for the Army to attain the capability to execute ALO is to use a model such as Mongol operational warfare for the development of the required doctrine, training, organization, materiel, and leader development.

APPENDIX A

Maps





THE MONGOL EMPIRE, 1206–1260

APPENDIX B

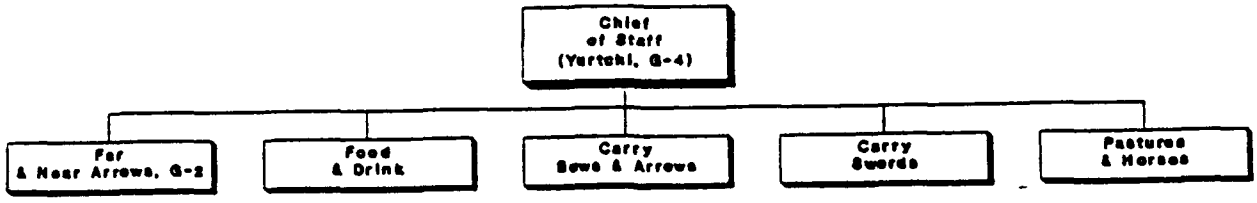
Glossary

Arban	Mongol troop of ten men
Jagun	Mongol squadron of ten Arbans; 100 men
Kashik	Mongol Imperial Guard
Kuriltai	General council of senior commanders
Minghan	Mongol regiment of ten Jaguns; 1000 men
Naptha	Petroleum based inflammable oil
Orlok	Mongol Field Marshal
Tumen	Mongol division of ten minghans; 10,000 men
Yam	Mongol courier system
Yasak	Mongol laws or code of conduct
Yurtchi	Mongol Quartermaster

APPENDIX C

Mongol Staff Organization

Mongol Army Staff



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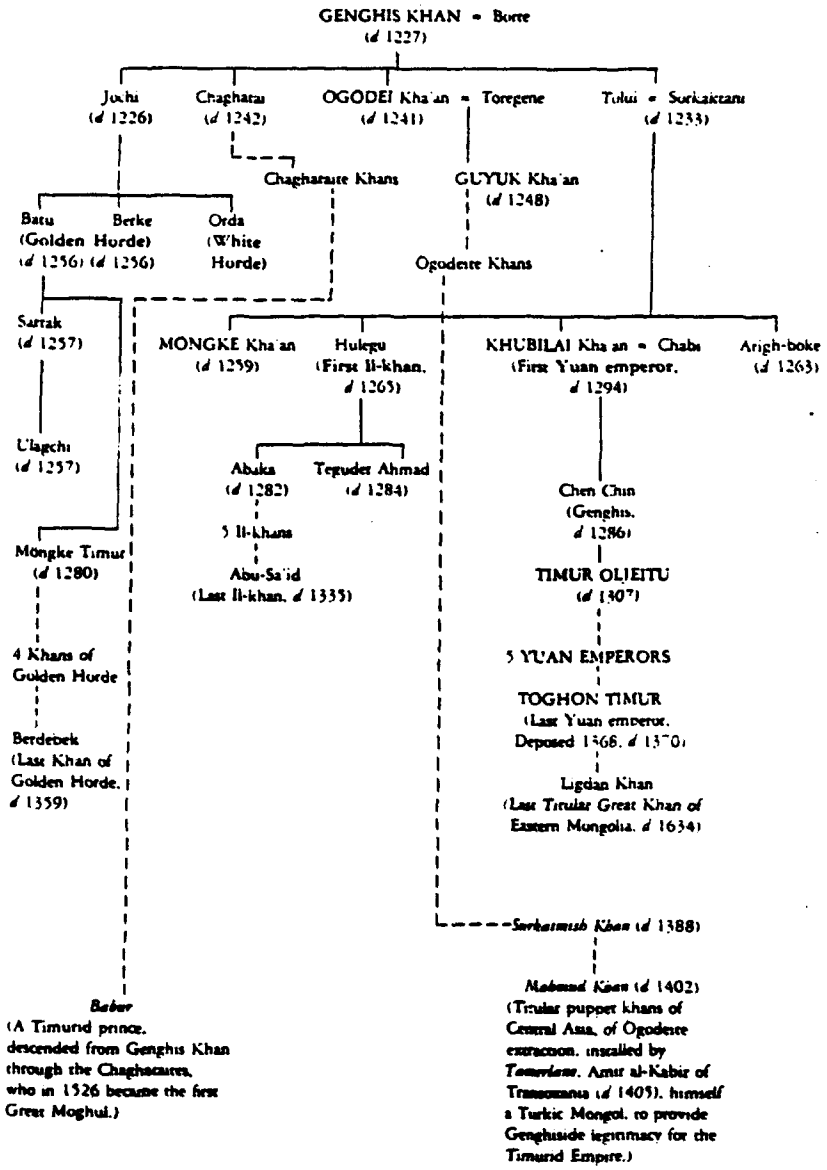
APPENDIX D

Genealogical Chart

Descendants of Genghis Khan



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Section I. Introduction

1. General of the Army Douglas MacArthur, A Soldier Speaks (New York: Frederick A. Praeger, Publishers, 1965), pp. 63-64. From GEN MacArthur's annual Report of the Chief of Staff for fiscal year 1935.

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3. Ibid., p. 63.

4. Trevor N. Dupuy, The Evolution of Weapons and Warfare (Indianapolis: The Bobbs-Merrill Company, Inc., 1980), p. 71.

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Section II. AirLand Operations

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2. US Army, TRADOC Regulation 11-15, Concept Based Requirements System (Ft Monroe: USA Training and Doctrine Command, 1989), p. 5. Discussion of concepts as a key component of top-down guidance.

3. Ibid., p. 5.

4. Ibid., p. 3. CBRS is the primary system that the Training and Doctrine Command (TRADOC) uses to fulfill its mission as the Architect of the Future Army. Through TRADOC and CBRS, the Army develops, integrates, and synchronizes its doctrine, training, organization, materiel, and leader development. The CBRS, uses

both continuous and cyclic events to provide decision support products to assist the Army in development and prioritization processes.

5. TRADOC Pam 525-5, p. 1. FM 100-5, pp. 27-28, refers to the operational level as corps through theater.

6. TRADOC Pam 525-5, pp. 16-17.

7. Ibid., pp. 17-25. The requirements for each stage are discussed in detail.

8. Ibid., p. 34.

9. Ibid., pp. 34-35.

10. Ibib., p. 40.

11. Ibid., p. 38.

12. Ibid., pp. 36-37.

13. Ibid., p. 43.

Section III. Mongol Operational Warfare

1. See Appendix A for map.

2. Genghis Khan's actual name was Temujin. Temujin (born 1155) was the illiterate tribal chieftain who, after three decades of internecine conflict, united the nomadic tribes of the Eurasian steppes into the Mongol nation. Ainslie T. Embree, ed. Encyclopedia of Asian History (New York: Charles Scrobner's Sons, 1988), p. 24.

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6. Dupuy, Genghis Khan, p. 60. Gale, Kings, p. 82.

7. S. R. Turnbull, The Mongols (London: Osprey Publishing Ltd., 1980), pp. 24-25. Dupuy, Genghis Khan, p. 43.

8. Harold Lamb, Genghis Khan, The Emperor of All Men (Garden City: Doubleday & Company, Inc., 1927), pp. 117-119. Harold Lamb, The March of the Barbarians (New York: Doubleday, Doran, and Company, Ltd., 1940), p. 59. Ralph Vickers, "The Mongols and Their Impact on the Medieval West." Strategy & Tactics, (March-April 1973), p. 24. Heral, "Yasotay", Armed Forces, p. 56. Livesey, Great Commanders, p. 34.

9. Turnbull, Mongols, p. 24.

10. Heral, "Yasotay", Armed Forces, p. 60. Lamb, Genghis Khan, p. 116. Livesey, Great Commanders, p. 34.

11. Dupuy, Genghis Khan, p. 62. Gale, Kings, p. 83.

12. Heral, "Yasotay", Armed Forces, p. 56.

13. B. H. Liddell Hart, Great Captains Unveiled (Edinburgh: William Blackwood and Sons Ltd., 1928), p. 13.

14. Ralph Fox, Genghis Khan (New York: Harcourt, Brace and Company, 1936), p. 201.

15. Flight Lieutenant C. C. Walker, "Jenghiz Khan, The Last Campaign", Canadian Defence Quarterly, (October 1932 to July 1933), p. 167.

16. Fox, Genghis Khan, p. 201. Hart, Great Captains, p. 13. Livesey, Great Commanders, p. 34. See Appendix D, Genealogical Chart; the commander of each column was a son of Genghis Khan.

17. James Chambers, The Devil's Horsemen (Scranton: Haddon Craftsmen, Inc., 1979), p. 10. Dupuy, Military History, p. 337.

18. Chambers, Horsemen, p. 9. Dupuy, Genghis Khan, p. 62. Fox, Genghis Khan, p. 201. Hart, Great Captains, p. 13.

19. Chambers, Horsemen, p. 10.

20. Dupuy, Genghis Khan, p. 66.

21. Chambers, Horsemen, pp. 11, 15. Hart, Great Captains, p. 15.

22. Dupuy, Military History, p. 337. Fox, Genghis Khan, pp. 202, 204.

23. Livesey, Great Commanders, p. 34.

24. Gale, Kings, p. 88.

25. Liddell Hart, Great Captains, pp. 16-17.

26. Chambers, Horsemen, p. 15. Hart, Great Captains, pp. 16-17.

27. Carl Von Clausewitz, On War, edited and translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), p. 89. Clausewitz refers to the government, people, and army as the aspects of the paradoxical trinity which dominate war.

28. See Appendix A for map.

29. Liddell Hart, Great Captains, p. 21.

30. Lamb, Genghis Khan, p. 213.

31. Turnbull, Mongols, p. 7. The Mongols focused their preparation effort in the areas of military intelligence, logistics, training, operational planning, engineering, and politics.

32. Dupuy, Military History, p. 348. Lamb, Genghis Khan, p. 214. Richard D. McCreight, The Mongol Warrior Epic: Masters of Thirteenth Century Maneuver Warfare (Ft Leavenworth: USA Command and General Staff College, 1983), p. 125. The imbalance in intelligence was due in part to the Mongol's successful reconnaissance and counter-reconnaissance operations and their intelligence and counter-intelligence operations. Joseph I. Greene The Infantry Journal Reader (New York: Doubleday, Doran, and Company, Inc., 1944), p. 366. The Mongols exploited their knowledge to the detriment of the enemy. For example in the political arena, Subetai knew that Europe could not concentrate its power against him because of internal war with the papal powers. He also used his foreknowledge to attack the already shaky alliance between the Hungarians and the Turks to create even more internal division for the Europeans.

33. Chambers, Horsemen, p. 81. Dupuy, Military History, p. 348. Hart, Great Captains, pp. 22-23.

34. Lamb, March, p. 146.

35. Turnbull, Mongols, p. 25.

36. Chambers, Horsemen, p. 81.

37. Lamb, March, p. 146.

38. Dupuy, Military History, p. 348.

39. Liddell Hart, Great Captains, p. 24.

40. Chambers, Horsemen, p. 99.

41. Ibid., Horsemen, p. 99.

42. Dupuy, Military History, p. 349. Leo de Hartog, Genghis Khan (London: I. B. Tauris and Company, Ltd., 1989), p. 174.

43. Lamb, March, p. 148. The Mongols maintained this rate of march through the snow of Galicia.

44. Dupuy, Genghis Khan, p. 104.

45. Dupuy, Evolution of Weapons, p. 78.

46. Hartog, Genghis Khan, p. 174.

47. Dupuy, Genghis Khan, p. 105.

48. Liddell Hart, Great Captains, pp. 24, 26.

49. Ibid., p. 27. Turnbull, Mongols, p. 34.

50. Liddell Hart, Great Captains, p. 27.

51. Dupuy, Genghis Khan, p. 107.

52. Dupuy, Military History, p. 350. Lamb, March, pp. 148-149.

53. Lamb, Genghis Khan, p. 217.

54. Charles J. Halperin, Russia and the Golden Horde (Bloomington: Indiana University Press, 1987), p. 7.

Section IV. Mongol DTOML

1. Thomas T. Allsen, Mongol Imperialism (Berkeley: University of California Press, 1987), pp. 224-225. Christopher D. Bellamy, The Evolution of Modern Land Warfare (London: Routledge, 1990), p. 195. Fox, Genghis Khan, p. 200.

2. Greene, Infantry, pp. 362-365.

3. Greene, Infantry, pp. 369-370.

4. Liddell Hart, Great Captains, p. 11.

5. Dupuy, Genghis Khan, p. 43. Turnbull, Mongols, p. 24. Spies gathered military, political, economic, social, geographic, and meteorological information on the enemy country.

6. Desmond H. Martin, The Rise of Chingis Khan and His Conquest of Northern China (Baltimore: The John Hopkins Press, 1950), p. 27. Chambers, Horsemen, p. 65. Dupuy, Weapons and Warfare, p. 77. Greene, Infantry, p. 363. Turnbull, Mongols, pp. 23-25. The Orloks were Mongol senior military leaders.

7. Allsen, Imperialism, p. 1. Greene, Infantry, p. 363.

8. Greene, Infantry, pp. 363, 366. Martin, Rise, p. 27. Turnbull, Mongols, p. 24.

9. Greene, Infantry, p. 374. Christopher Bellamy, The Future of Land Warfare (New York: St. Martin's Press, 1987), pp. 277-279. According to Bellamy's analysis, the 27 KM/Day rate of advance of the Mongols was impressive even by modern standards. His comparison includes the rates of advance of the Germans in 1940 (10 Km/Day) and the Israelis in 1973 (5.6 Km/Day).

10. Dupuy, Military History, p. 341.

11. W. S. Taylor, Genghis Khan: Leadership for AirLand Battle (Maxwell AFB: Air Command and Staff College, 1988), p. 35. Bellamy, Land Warfare, pp. 193, 195. Gale, Kings, p. 71. Greene, Infantry, p. 369.

12. Greene, Infantry, p. 374. McCreight, Warrior Epic, p. 145.

13. Ibid., Infantry, p. 374.

14. Lynn Montross, War Through the Ages (New York: Harper and Row, Publishers, Inc., 1960), p. 153.

15. Bellamy, Land Warfare, p. 200.

16. Fox, Genghis Khan, p. 146. Greene, Infantry, p. 375. Martin, Rise, p. 37.

17. Dupuy, Genghis Khan, p. 25.

18. Chambers, Horsemen, pp. 43, 65. Dupuy, Genghis Khan, p. 25. Martin, Rise, p. 29. Turnbull, Mongols, pp. 24-25.

19. Allsen, Imperialism, p. 6. Fox, Genghis Khan, p. 116.

Greene, Infantry, pp. 362, 367. Hart, Great Captains, pp. 10, 31. Taylor, Leadership, p. 266.

20. Gale, Kings, p. 103. Martin, Rise, p. 29.

21. Gale, Kings, p. 103.

22. Ibid., Kings, pp. 67, 88, 103-104. McCreight, Warrior Epic, p. 66.

23. McCreight, Warrior Epic, p. 59. Fox, Genghis Khan, p. 114. For example, these are two of the laws from the Yasak, "It is ordered to believe that there is only one God, creator of heaven and earth, who alone gives life and death, riches and poverty as pleases Him--and who has over everthing an absolute power. Every man who does not go to war must work for the empire, without reward, for a certain time". Lamb. Genghis Khan, p. 201.

24. The section on organization provides detail on the formal structure oof the Mongol army.

25. Liddell Hart, Great Captains, p. 9. McCreight, Warrior Epic, p. 63.

26. Bellamy, Land Warfare, p. 195.

27. Gale, Kings, p. 104.

28. Dupuy, Genghis Khan, p. 43. Dupuy, Military History, p. 343. Martin, Rise, p. 6. McCreight, Warrior Epic, pp. 23, 25.

29. Chambers, Horsemen, p. 61. McCreight, Warrior Epic, p. 67. Along the 1400 miles between the Mongol capital of Karakorum and Korea, they established twenty-two routes with 525 Yam stations.

30. Bellamy, Land Warfare, p. 199. Dupuy, Military History, p. 344. Dupuy, Weapons and Warfare, p. 79. Greene, Infantry, pp. 369-370. Martin, Rise, pp. 28, 39. Taylor, Leadership, p. 26.

31. Martin, Rise, p. 32, 39. McCreight, Warrior Epic, pp. 70, 87. Taylor, Leadership, p. 26.

32. Chambers, Horsemen, p. 64. Hart, Great Captains, pp. 10, 28. McCreight, Warrior Epic, p. 83.

33. Bellamy, Land Warfare, p. 198.

34. Liddell Hart, Great Captains, p. 34.

35. Bellamy, Land Warfare, p. 198. Dupuy, Genghis Khan, p. 26. Greene, Infantry, p. 368. Martin, Rise, p. 31. For example, in

the Khwarazm campaign they amassed 3000 ballistae, 300 catapults, and 700 machines to hurl burning naptha. The section on materiel provides details of the Mongol weaponry.

36. McCreight, Warrior Epic, p. 47.

37. Ibid., Warrior Epic, pp. 48, 57. Martin, Rise, p. 41.

38. Dupuy, Military History, p. 341. McCreight, Warrior Epic, p. 142.

39. Chambers, Horsemen, p. 59. Fox, Genghis Khan, p. 144. Greene, Infantry, p. 363.

40. Chambers, Horsemen, p. 59. McCreight, Warrior Epic, pp. 16, 52. The Imperial Guard Division was a critical part of their leader development system and is covered in the leader development section.

41. McCreight, Warrior Epic, pp. 48-49.

42. Hartog, Genghis Khan, p. 50. Martin, Rise, p. 21. Turnbull, Mongols. p. 25.

43. Chambers, Horsemen, p. 60. McCreight, Warrior Epic, p. 50.

44. Chambers, Horsemen, p. 60. Martin, Rise, p. 21. McCreight, Warrior Epic, p. 16. It was common for senior leaders to visit battle areas with their subordinates to discuss the conduct of a just-concluded battle.

45. Gale, Kings, p. 67.

46. McCreight, Warrior Epic, pp. 30, 48.

47. Chambers, Horsemen, p. 15. Dupuy, Genghis Khan, p. 44. For example, immediately following the taking of Samarkand, the Mongols set about studying the Khwarazmian artillery that was superior to their own. Montross, Ages, p. 156. Training continued throughout a war. During the invasion of Europe, Batu gave his officers a tactics lesson on the eve of battle by occupying an observation point and reviewing the errors they saw in the enemy's encampment.

48. Liddell Hart, Great Captains, p. 8. Hartog, Genghis Khan, p. 42. Martin, Rise, p. 22. Livesey, Great Commanders, pp. 31, 33. Turnbull, Mongols, p. 22. Gale, Kings, p. 67. In the Mongol army there was a combination of rigidity and flexibility. Each squad elected its own leader. Higher commanders selected officers as the leaders of the troops and above. As in Training, the unit took precedence over the individual. Troops remained permanently

assigned to their units to instill discipline and a sense of loyalty while officers' assignments changed based on their abilities. Chambers, Horsemen, p. 56. The Mongols identified each division by distinctive items or colors on their uniforms.

49. Chambers, Horsemen, p. 54. Hartog, Genghis Khan, p. 43. Martin, Rise, p. 22.

50. Dupuy, Military History, p. 340.

51. Allsen, Imperialism, p. 191.

52. Chambers, Horsemen, pp. 24, 55. Dupuy, Military History, p. 341. Hartog, Genghis Khan, p. 50. McCreight, Warrior Epic, p. 68.

53. Chambers, Horsemen, p. 55.

54. Richard Simpkin, Deep Battle, The Brainchild of Marshal Tukhachevskii (London: Brassey's Defence Publishers, 1987), p. 20. Allsen, Imperialism, p. 7.

55. Dupuy, Genghis Khan, p. 44. McCreight, Warrior Epic, pp. 34, 37, 142.

56. Chambers, Horsemen, p. 25. The general staff organizational chart is at Appendix C.

57. Liddell Hart, Great Captains, pp. 8-9. Greene, Infantry, pp. 367-368.

58. Chambers, Horsemen, pp. 63-64. Turnbull, Mongols, pp. 30-31. The oldest bronze cannon is Mongol and is dated 1333. They even employed rockets fired several at a time from a box-like launching platform.

59. McCreight, Warrior Epic, p. 54.

60. Greene, Infantry, p. 369.

61. Chambers, Horsemen, p. 55.

62. Dupuy, Genghis Khan, p. 19. Greene, Infantry, p. 368. McCreight, Warrior Epic, p. 147.

63. Dupuy, Genghis Khan, p. 43. McCreight, Warrior Epic, p. 23. Martin, Rise, p. 6. Taylor, Leadership, pp. 29, 33. Walker, "Jenghiz Khan", Canadian Defence Quarterly, p.166.

64. Greene, Infantry, p. 368.

65. Greene, Infantry, p. 368. Hartog, Genghis Khan, p. 44. Martin, Rise, p. 23. McCreight, Warrior Epic, pp. 18, 85.

66. Chambers, Horsemen, p. 59. Greene, Infantry, p. 368.

67. Dupuy, Genghis Khan, p. 19. Dupuy, Military History, p. 341. Hart, Great Captains, p. 8. Hartog, Genghis Khan, p. 45. Martin, Rise, p. 43. McCreight, Warrior Epic, p. 36.

Section V. Implications

1. Dupuy, Evolution of Weapons, p. 340.

2. Chambers, Horsemen, p. 66.

3. Greene, Infantry, p. 363.

4. Belamy, Land Warfare, p. 197. Christopher D. Bellamy, "Heirs of Genghis Khan: The Influence of the Tartar-Mongols on the Imperial Russian and Soviet Armies." RUSI, (March 1983), p. 52-58. Dupuy, Evolution of Weapons, p. 79. Simpkin, Race, pp. 37, 311. Simpkin, Deep Battle, pp. 33, 213.

5. McCreight, Warrior Epic, pp. 29-30.

6. Sun Tzu, The Art of War (London: Oxford University Press, 1963), pp. 73, 87, 92, 96, 100.

7. John R. Boyd, A Discourse on Winning and Losing (1987), pp. 25-28, 146-155.

Section VI. Summary

1. Belamy, "Heirs", RUSI, p. 52.

2. Unfortunately the scope of this monograph is limited and prevents the exhaustive study of an area that could affect the future development of the Army. Such model development, validation, and adoption represent a significantly greater expenditure of time and effort. However there may be enough evidence presented to warrant further interest and study.

3. Bellamy, Land Warfare, pp. 197, 243.

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